

Work Order ID 81400

81400

Page 1

March-14-12 7:47:52 AM

Item ID: D350-636-016

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Skidtube STD w/ Training Wearplates, RH

Start Date: 13/03/2012 Start Qty: 1.00 *1*

Cust Item ID:

Required Date: 27/03/2012 Req'd Qty: 1.00 *1*

Customer:

Reference:

Approvals: Process Plan: MLJ Date: 12/03/14 Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start *NR1*
Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
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D3492	C
-------	---

D4168	A
-------	---

IIN-D350-636	I
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100

100

DC

Document Control

DOCUMENT CONTROL

Memo

Photocopy blue file and type labels per PPP D350-636-016 CHG 002

0.00

0.00

or chg 3
per ECN 12-542
depends on D4184-041
Rev. B or C?

for MLJ 12-5-10

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start *NR1*

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Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
110	Skidtubes	0.00							
110									
Skidtubes	Memo	0.00							
Skidtubes	1- Pick D2600-3 Bent								
	2- Deburr FWD and AFT ends, remove bending marks. Scribe batch# inside AFT end per dwg D4168								
	3- Drill pilot holes for blade fitting bolt holes using DT8983. Open to 0.500", deburr, section R-R								
	4- Locate DT8329 off of blade fitting bolt holes and drill pilot holes for blade fitting, section R-R								
	5- Drill fwd step holes using DT9616. Ensure proper positioning. All holes as per dwg D4168 Detail J								
	6- Drill pilot holes as per Dwg D4168 sheet 5 (D4168-2 details). Drill using drill Jig DT8150 & DT8863A for first side only DT8863B for second side (detail K)								
	7- Clecko DT8863B on second side of tube and drill pilot holes for detail K. ***SECOND SIDE***								
	8- Drill most FWD wearplate hole using DT9678 locating of 66.54" hole								
	9- Open up holes of Detail J to 0.297" (total of 2 holes per side) +.201 iplace per side and open holes of detail M section R-R to 0.500" as per dwg D4168								
	10- Weld D2744 Cap as per Dwg D4168 and QSI 004. Fill grooves in bend/ left from bending as per QSI 004 A/R Aluminum Rod batch: m120164 BE 12/04/05								

12/04/05

Dart Aerospace Ltd

W/O: 81400		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
12-4-9	150	Shaft rod QCT	DP	12-4-9			

Part No: D350-636-016 PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

160

0.00

160

Skidtubes

0.00

Skidtubes

Skidtubes

Memo

1-Open up holes of Detail L and ground handling to 0.625" (total of 8 holes per side)
as per dwg D4168.

2-Open up holes of Detail K to 0.750" (total of 4 holes per side)
as per dwg D4168.

3- Open float hole to 0.500" (4 per side) + Remove wearplate holes to 0.375" (4 per side)

4-Chamfer holes of Detail K,L, ground handling and float holes per dwg D4168
(welding instructions on sheet 9)

5-Deburr and blow out all chips from inside of tube

6- Prepare tube for welding, remove alodine as required.

7-Bond web D2739 in place as per QSI 015

A/R Sikaflex-291 batch: 120813
exp. date: 12/08/13

8- Weld spacers D3490-1, D3490-3 and D2743 as per dwg D4168 & QSI004

(welding instructions on sheet 8)
A/R Aluminum Rod batch: M20854

9- At section AP-AP drill out x-bolt spacer to 0.404"

10-Grind welds flush as per Dwg D4168

[Signature]
12-04-09

[Signature] 12/04/09

[Signature] 12-04-10

[Signature] 12-4-11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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N9000040100Setup Start ***NS1***

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Item Name: Skidtube STD w/ Training Wearplates, RH

Start Date: 13/03/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 27/03/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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11-Spot face ground handling holes section (total of 4 places per side) as per
dwg D4168

12- C'bore section CH-CH

13- Deburr holes

***** FOR DELUXE SKIDTUBE IF APPLICABLE DRILL TOW RING
HOLE IN TUBE *****

170

QC10- Inspect visual per QSI004- ground welds

0.00

170

QC

Memo

0.00

Quality Control

180

QC5- Inspect part completeness to step on W/O

0.00

180

QC

Memo

0.00

Quality Control

> B/CC 12/04/11

Pto →

8.7/11/17

8.7/11/17

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D350-636-016 PAR #: _____ Fault Category: Landing Gear/SLID TWT NCR: Yes No DQA: 12/5/14 Date: 12/05/14
 Resolution: Rework Disposition: Re work QA: N/C Closed: 12/5/14 Date: 12/5/14

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
12/4/14	# 160.12	Found at inspection that the 12" hole from AFT is ovalized. Counter bore should be 0.313" measure 350"	CP 12.04.11 12/04/12	Drill out + Ream + ball space Re weld D4170-1 82043 inspected AIR. 12/20/14	BE 12-04-13	12-4-12 12/11/12	CP 12.04.11 12/04/12	S 12/04/11
		Re counter bore back to "Damm" Counterbore. Process	CP 12.04.11	Grinds welds flush and re counter bore as per drawing	CC/DP 12-4-16	12/11/12	CP 12.04.11	S 12/04/11

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Start Date: 13/03/2012 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 27/03/2012 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

190 Pressure Wash per QSI005 4.3

0.00

190

HandFinish

Memo

0.00

Hand Finishing

Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.

206/12-4-17

200

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00

200

Powdercoat

Memo

0.00

Powder Coating

START TIME: 9:30

OVEN TEMPERATURE: 320 °F

FINISH TIME: 10:00

m-21134

IX: 12/04/18

210

QC3- Inspect Part Finish

0.00

210

QC

Memo

0.00

Quality Control

Inspect for foreign object per QSI 024

1 125-8

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Start Date: 13/03/2012 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 27/03/2012 Req'd Qty: 1.00 ***1***

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Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
220	HandFinishing	0.00							
220	HandFinish	0.00				1	8	(28)	12/05/08
Hand Finishing	Memo 1- Install inserts as per Dwg D4168					RH			
230	HandFinishing	0.00							
230	HandFinish	0.00				1	8	(28)	12/05/09
Hand Finishing	Memo 1-Inspect for Foreign Objects					RH			
	2-Spray inside of tube with "LPS-3" batch: <u>N/14</u>								
	3-Install blade fitting D3488-041, wearshoes and ground handling hardware as per dwg D4168 SIKA FLEX 241 BATCH: <u>121221</u> EXP DATE: <u>13/01</u>								
	4-assemble o'ring to plug as per dwg D3492 and apply o'ring lube A/R 55-o'ring lube batch: <u>110 4248</u>								
	5-Coat all exposed fasteners with "LPS Procyon" batch: <u>114 596</u>								

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Item Name: Skidtube STD w/ Training Wearplates, RH

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Cust Item ID:

Required Date: 27/03/2012 Req'd Qty: 1.00 *1*

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Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
270		0.00							
270	Packaging								
Packaging	Memo	0.00							
Packaging	Identify and pack for shipping as per PPPD350-636-016								
	Location: _____								
	PPP rev: <u>a</u>								
280	QC21- Final Inspection - Work Order Release	0.00							
280									
QC	Memo	0.00							
Quality Control									

IX 12-5-10 12/5/10 MW 12/05/10

81400 RH

W/O:			WORK ORDER CHANGES							
DATE	STEP	PROCEDURE CHANGE				By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Picklist Print

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Work Order ID: 81400

81400

Parent Item: D350-636-016

D350-636-016

Parent Item Name: Skidtube STD w/ Training Wearplates, RH

Start Date: 13/03/2012

Required Date: 27/03/2012

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP rev:A 10.09.28 new issue DD verf:EC
11.04.14 ecn11-553 DD verf:EC
per NCR 11-906 DD verf:EC

IPP Rev:B
IPP Rev:C 11.10.18 as

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D3490-1 Manufactured No

D3490-1

Cross Bolt Spacer

Location	Loc Qty	Loc Code
LG001	49	
62450	2	
74875	4	
77042	3	
78793	40	

**

BE12/04/10
B81976 x4

D3490-3 Manufactured No

D3490-3

Cross Bolt Spacer

Location	Loc Qty	Loc Code
LG001	38	
78800	38	

**

BE12/04/10
B82016 x4

AN3C34A Purchased No

AN3C34A x

BOLT

Location	Loc Qty	Loc Code
ST353	51	
116075 ✓	31	
117514	20	

**

28 12/05/08

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Parent Item: D350-636-016

D350-636-016

Parent Item Name: Skidtube STD w/ Training Wearplates, RH

Start Date: 13/03/2012

Required Date: 27/03/2012

Start Qty: 1.00

Required Qty: 1.00

AN3C36A

Purchased

No

230

Each

158.0000

4

4

AN3C36A

BOLT

**

4 (2P) 12/03/08

Location

Loc Qty

Loc Code

FG

4

101261

4

ST353

154

116590

0

119083

2

119324 ✓

57

120641

40

121013

55

AN3C37A

Purchased

No

230

Each

110.0000

1

1

AN3C37A

BOLT

**

1121584 (2P)

Location

Loc Qty

Loc Code

ST354

110

116874

11

117010

2

120422

47

120731

50

AN3C42A

Purchased

No

230

Each

43.0000

1

1

AN3C42A

BOLT

**

1215112 (2P)

Location

Loc Qty

Loc Code

ST354

43

106176

1

118131

2

119673

15

120464

25

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Shop Packet Print

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Parent Item Name: Skidtube STD w/ Training Wearplates, RH

Start Date: 13/03/2012

Required Date: 27/03/2012

Start Qty: 1.00

Required Qty: 1.00

D3488-042

Manufactured No

230

Each

19.0000

1

1

D3488-042

Blade Fitting Assembly, RH

**

1

(2P)

12/05/08

Location

Loc Qty

Loc Code

FP002

82258 ✓

19

62003

1

75068

9

77015

9

D3492-1

Manufactured No

230

Each

130.0000

8

8

D3492-1

Plug

**

8

(2P)

12/05/08

Location

Loc Qty

Loc Code

FP002

83098 ✓

130

69531

8

74444

2

76235

20

77037

100

D3492-3

Manufactured No

230

Each

69.0000

8

8

D3492-3

Plug

**

8

(2P)

12/05/08

Location

Loc Qty

Loc Code

FP-A

69

78600

69

83099 ✓

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Parent Item Name: Skidtube STD w/ Training Wearplates, RH

Start Date: 13/03/2012

Required Date: 27/03/2012

Start Qty: 1.00

Required Qty: 1.00

D3873-1

Manufactured No

230 Each

228.0000

7 7

D3873-1

Bushing

**

7 (2P) 12/05/08

Location

Loc Qty

Loc Code

ST057

76791 ✓
79561

182

182

ST067

46

64760

1

68247

4

73829

19

73830

2

79560

20

D4154-041

Rev. B

Manufactured No

230 Each

2.0000

1 1

D4154-041

Wearplate Assembly

**

1 (2P) 12/05/08

Location

Loc Qty

Loc Code

FG

80729
77007

2

2

D4170-1

Manufactured No

230 Each

13.0000

4 4

D4170-1

Bushing

**

BE 12/04/10
882043 *4

Location

Loc Qty

Loc Code

LG001

13

71844

5

76677

8

D4171-1

Manufactured No

230 Each

9.0000

1 1

D4171-1

Bushing

**

1 (2P) 12/05/08

Location

Loc Qty

Loc Code

ST135

77008 ✓

9

9

March-14-12 7:47:57 AM

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Parent Item Name: Skidtube STD w/ Training Wearplates, RH

Start Date: 13/03/2012

Required Date: 27/03/2012

Start Qty: 1.00

Required Qty: 1.00

MS21043-3 Purchased No 230 Each 840.0000 4 4

MS21043-3

Nut

**

4

2P

12/05/08

should be 5 instead
of 4 *

Location

Loc Qty

Loc Code

FG	72	
103691	72	
GA	334	
120693	334	
ST301	434	
118077	2	
118614 ✓	382	
118686	30	
119758	20	

NAS1149C0363R Purchased No 230 Each 3,381.000 9 9

NAS1149C0363R

Washer

**

9

2P

12/05/08

Location

Loc Qty

Loc Code

ST297	3381	
114742 ✓	3381	

NAS1515H3L Purchased No 230 Each 184.0000 4 4

*NAS1515H3I *

WASHER

**

4

2P

12/05/08

Location

Loc Qty

Loc Code

FG	40	
102472	40	
ST277	144	
118686	3	
119438	1	
120072	40	
120360	100	

121556 ✓

3

1

March-14-12 7:47:57 AM

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Page 5

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 6

Work Order ID: 81400

81400

Parent Item: D350-636-016

D350-636-016

Parent Item Name: Skidtube STD w/ Training Wearplates, RH

Start Date: 13/03/2012

Required Date: 27/03/2012

Start Qty: 1.00

Required Qty: 1.00

NAS1611-010

Purchased

No

230

Each

209.0000

8

8

NAS1611-010

O-RING

**

8 (2P) 12/05/08

Location

Loc Qty

Loc Code

FP

121415 ✓

50

110915

0

120770

50

FP001

159

110915

14

117460

8

118077

1

118612

3

119438

47

120308

36

120986

50

NAS1611-013

Purchased

No

230

Each

168.0000

8

8

NAS1611-013

O-RING

**

8 (2P) 12/05/08

Location

Loc Qty

Loc Code

FP001

168

116582

5

117291

2

117887

53

119623

36

120360

22

120910

50

121584 ✓

March-14-12 7:47:57 AM

Shop Packet Print

Page 6

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March-14-12 7:47:57 AM

Page 7

Work Order ID: 81400 .

81400

Parent Item: D350-636-016

D350-636-016

Parent Item Name: Skidtube STD w/ Training Wearplates, RH

Start Date: 13/03/2012

Required Date: 27/03/2012

Start Qty: 1.00

Required Qty: 1.00

NAS1149D0863J

Purchased No

250 Each

231.0000 2

**

NAS1149D0863.J
WASHER

Location

Loc Qty

Loc Code

ST298

231

118078

36

119307

95

120308

100

D2744

Manufactured No

110 Each

60.0000 1

**

D2744
Cap

Location

Loc Qty

Loc Code

LG002

60

62715

1

70881

10

71861

7

78900

42

D2600-3-BENT

Manufactured No

110 Each

25.0000 1

**

D2600-3-BENT
Extrusion Bent

Location

Loc Qty

Loc Code

LG

25

66875

7

73253

1

75021

1

75022

1

75023

1

81330

14

March-14-12 7:47:57 AM

Shop Packet Print

Page 7

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March-14-12 7:47:57 AM

Page 8

Work Order ID: 81400

81400

Parent Item: D350-636-016

D350-636-016

Parent Item Name: Skidtube STD w/ Training Wearplates, RH

Start Date: 13/03/2012

Required Date: 27/03/2012

Start Qty: 1.00

Required Qty: 1.00

D2743 Manufactured No

160

Each

248.0000

8

8

D2743

Crossbolt Spacer

**

BE 12/24/10
B 81965 *3

Location

Loc Qty

Loc Code

LG001

248

67766

4

68251

3

73403

64

74445

1

78603

76

79517

100

5

D2739 Manufactured No

160

Each

8.0000

1

1

D2739

350 I Beam

**

78 12/04/09

Location

Loc Qty

Loc Code

LG

8

72155

1

80083

7

82122

ALS4-1032-225 Purchased No

230

Each

1,134.000

4

4

AI S4-1032-225

Insert

**

4 28 12/05/08

Location

Loc Qty

Loc Code

ST281

1021

108696

146

110768

62

118386

55

118966

68

120671

690

ST282

113

120410

100

120451

13

121269

March-14-12 7:47:57 AM

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Page 8

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Page 11

Work Order ID: 81400

81400

Parent Item: D350-636-016

D350-636-016

Parent Item Name: Skidtube STD w/ Training Wearplates, RH

Start Date: 13/03/2012

Required Date: 27/03/2012

Start Qty: 1.00

Required Qty: 1.00

D2745

Manufactured No

230

Each

136.0000

8

8

D2745

Bushing

**

8

(2P)

12/05/08

Location

Loc Qty

Loc Code

FP

81964 ✓
79518

100

100

FP001

36

69529

1

76142

1

78597

34

NAS1149C0832R

Purchased

No

230

Each

304.0000

1

1

NAS1149C0832R

WASHER

**

1

(2P)

12/05/08

Location

Loc Qty

Loc Code

ST297

114915 ✓

304

304

March-14-12 7:47:58 AM

Shop Packet Print

Page 11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March-14-12 7:47:58 AM

Page 12

Work Order ID: 81400

81400

Parent Item: D350-636-016

D350-636-016

Parent Item Name: Skidtube STD w/ Training Wearplates, RH

Start Date: 13/03/2012

Required Date: 27/03/2012

Start Qty: 1.00

Required Qty: 1.00

AN3C6A

Purchased

No

230

Each

623.0000

4

4

AN3C6A

BOLT

**

4

(SP)

12/05/08

Location

Loc Qty

Loc Code

FP001

1

111982

1

ST351

622

111982

2

116419

23

116549

2

116704

12

117619

10

117688

1

117872

5

118422

13

119449

21

120423

133

120693 ✓

400

MS21043-6

Purchased

No

230

Each

809.0000

4

4

MS21043-6

NUT

**

4

(SP)

12/05/08

Location

Loc Qty

Loc Code

FG

20

103693

20

ST301

789

112314

83

117887

6

118384 ✓

200

120308

500

March-14-12 7:47:58 AM

Shop Packet Print

Page 12

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March-14-12 7:47:58 AM

Page 13

Work Order ID: 81400

81400

Parent Item: D350-636-016

D350-636-016

Parent Item Name: Skidtube STD w/ Training Wearplates, RH

Start Date: 13/03/2012

Required Date: 27/03/2012

Start Qty: 1.00

Required Qty: 1.00

D3493-1

Manufactured No

250

Each

66.0000

2

2

D3493-1

Washer

**

B82023

[Signature]

Location

Loc Qty

Loc Code

ST050

66

70697

2

77573

24

78835

40

Purchased

No

250

Each

85.0000

2

2

MS21083C8

MS21083C8

NUT

**

M121524

[Signature]

Location

Loc Qty

Loc Code

FP002

1

115884

1

ST303

14

115884

0

118077

1

119309

2

119436

9

119638

2

ST304

70

120142

20

120731

25

121011

25

Purchased

No

250

Each

51.0000

2

2

AN8C21A

AN8C21A

BOLT

**

M121167 12/5/10

[Signature]

Location

Loc Qty

Loc Code

ST343

51

118758

5

120094

42

120872

4

March-14-12 7:47:58 AM

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Page 13

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March-14-12 7:47:58 AM

Page 14

Work Order ID: 81400

81400

Parent Item: D350-636-016

D350-636-016

Parent Item Name: Skidtube STD w/ Training Wearplates, RH

Start Date: 13/03/2012

Required Date: 27/03/2012

Start Qty: 1.00

Required Qty: 1.00

D2741

Manufactured No

250

Each

37.0000

1

1

D2741

Blade, 350 Skidtube

**

679516

12/5/92

Location

Loc Qty

Loc Code

ST

-10

ST466

47

71856

1

76984

36

March-14-12 7:47:58 AM

Shop Packet Print

Page 14

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

QTY -041	QTY -042	QTY -043	QTY -044	PART NUMBER	DESCRIPTION
X				D4168-041	350 SKIDTUBE ASSEMBLY, LH
	X			D4168-042	350 SKIDTUBE ASSEMBLY, RH
		X		D4168-043	350 SKIDTUBE ASSEMBLY, LH
			X	D4168-044	350 SKIDTUBE ASSEMBLY, RH
1	1	1	1	D2739	WEB
8	8	8	8	D2743	SPACER
1	1	1	1	D2744	CAP
8	8	8	8	D2745	BUSHING
1	1	1	1	D3488-041	BLADE FITTING, LH
	1	1	1	D3488-042	BLADE FITTING, RH
4	4	4	4	D3490-1	SPACER
4	4	4	4	D3490-3	SPACER
		4	4	D3490-5	SPACER
8	8	8	8	D3492-041	PLUG ASSEMBLY
8	8	8	8	D3492-043	PLUG ASSEMBLY
		8	8	D3492-045	PLUG ASSEMBLY
8	8	8	8	D3631-1	WASHER
7	7	7	7	D3873-1	BUSHING
1	1	1	1	D4154-041	WEARPLATE ASSEMBLY
1	1	1	1	D4168-1	SKIDTUBE WELDMENT, LH
	1	1	1	D4168-2	SKIDTUBE WELDMENT, RH
		1	1	D4168-3	SKIDTUBE WELDMENT, LH
			1	D4168-4	SKIDTUBE WELDMENT, RH
4	4	4	4	D4170-1	SPACER
1	1	1	1	D4171-1	BUSHING
4	4	4	4	ALS4-1032-225	INSERT
4	4	4	4	AN3C6A	BOLT
1	1	1	1	AN3C34A	BOLT
4	4	4	4	AN3C36A	BOLT
4	4	4	4	AN6C44A	BOLT
1	1	1	1	AN8C35A	BOLT
9	9	9	9	AN960C10	WASHER (OR NAS1149CO363R)
4	4	4	4	AN960C10L	WASHER (OR NAS1149CO332R)
1	1	1	1	AN960C816L	WASHER (OR NAS1149CO832R)
5	5	5	5	MS21043-3	NUT
4	4	4	4	MS21043-6	NUT
1	1	1	1	MS21083C8	NUT
4	4	4	4	NAS1515H3L	WASHER

GENERAL NOTES:

- MATERIAL: MAKE D4168-1/-2/-3/-4 FROM D2600-3 EXTRUSION (INITIAL LENGTH = 120.0).
- FINISH:
 - CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIOR TO INSTALLING D2739 WEB.
 - POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
 - BLACK ANTI-SKID PAINT AS INDICATED TO 1.0 ABOVE SKIDTUBE CENTER-LINE PER DART 005 4.4 (OPTIONAL).
- TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- UNITS: INCHES UNLESS OTHERWISE NOTED
- BREAK SHARP EDGES: N/A
- IDENTIFICATION: N/A
- WEIGHT: D4168-041/-042/-043/-044 = 32.3 LBS
- WELD PER DART QSI 004
- FINAL CONFIGURATION SHOULD HAVE THE FOLLOWING MINIMUM MECHANICAL PROPERTIES:
 - MINIMUM YIELD TENSILE STRENGTH = 35 KSI
 - MINIMUM ULTIMATE TENSILE STRENGTH = 38 KSI
- COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF
- POWDER COATING WITH MEK DEGREASER.
- SPACER AND PLUG INSTALLED SAME AS SECTION AJ-AJ EXCEPT HORIZONTAL
- SPACER AND PLUG INSTALLED SAME AS SECTION AP-AP EXCEPT HORIZONTAL

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 81400 MCT

12/03/14

RELEASED
2010-09-15

A	NEW ISSUE	SC	10.08.09
REV.	DESCRIPTION	BY	DATE
DESIGN	SC	DART AEROSPACE USA, INC.	
DRAWN	SC	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		D4168	SHEET 1 OF 11
APPROVED		TITLE	SCALE
DE APPR.		350 SKIDTUBE ASSEMBLY	NTS
DATE	10.08.09	COPYRIGHT © 2010 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR COPIED OR REPRODUCED IN ANY FORM OR BY ANY MEANS WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

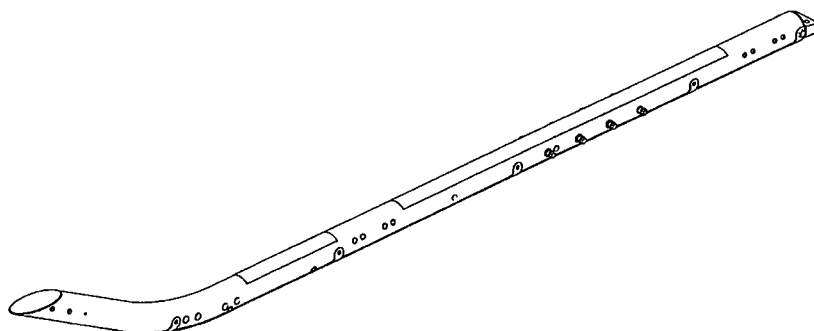
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

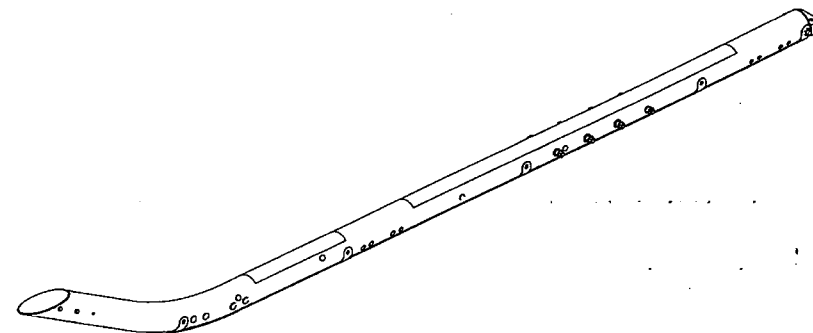
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

81400



D4168-041 350 SKIDTUBE ASSEMBLY, LH



D4168-042 350 SKIDTUBE ASSEMBLY, RH

RELEASED
2010-09-15
JW

DESIGN	SC	DART AEROSPACE USA, INC.	
DRAWN	SC	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		D4168	SHEET 2 OF 11
APPROVED		TITLE	SCALE
DE APPR.		350 SKIDTUBE ASSEMBLY	NTS
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

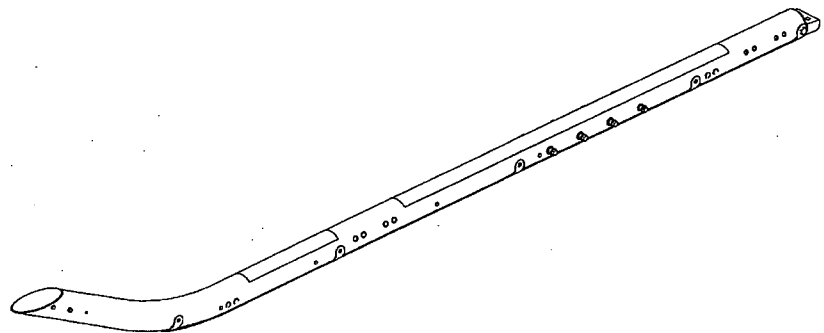
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

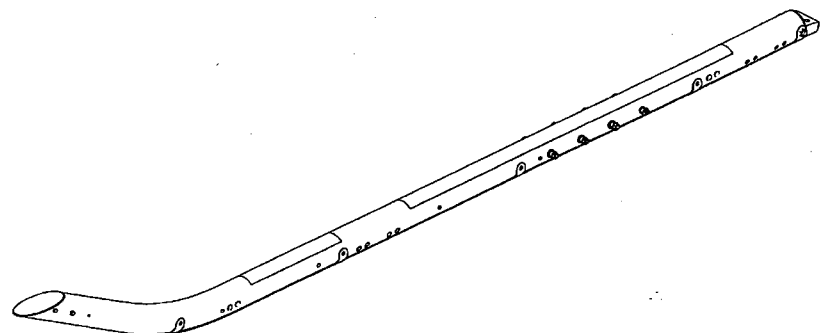
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

814010



D4168-043 350 SKIDTUBE ASSEMBLY, LH



D4168-044 350 SKIDTUBE ASSEMBLY, RH

RELEASED
2010-09-15

DESIGN	SC	DART AEROSPACE USA, INC.	
DRAWN	SC	PORT HADLOCK, WA	
CHECKED		DRAWING NO. D4168	REV. A
MFG. APPR.		SHEET 3 OF 11	
APPROVED		TITLE	SCALE
DE APPR.		350 SKIDTUBE ASSEMBLY	NTS
DATE	10.08.09	<small>COPYRIGHT © 2010 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL. WHO IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

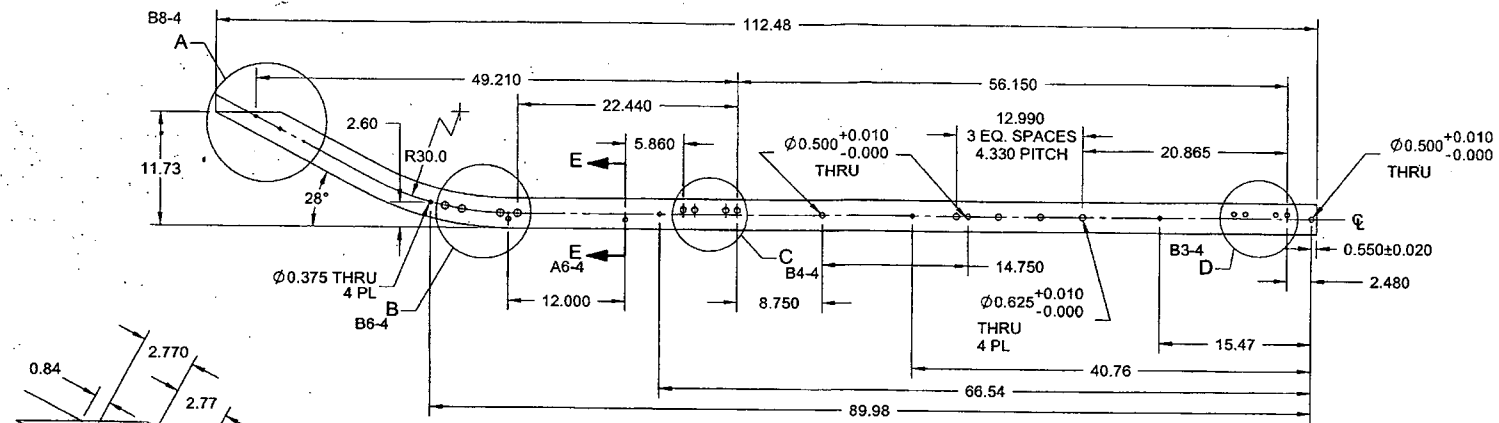
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

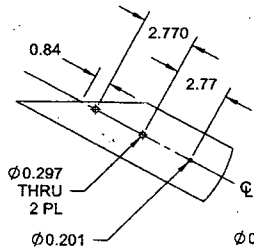
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

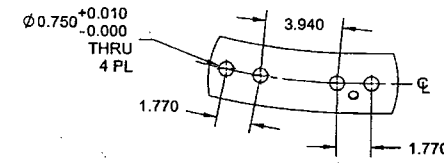
81400



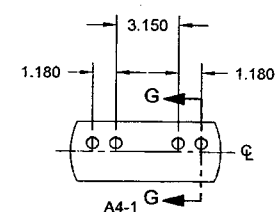
D4168-1 LH SKIDTUBE



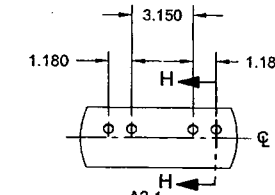
DETAIL A
SCALE 2X



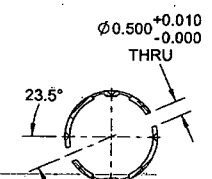
DETAIL B
SCALE 2X



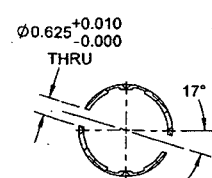
DETAIL C
SCALE 2X



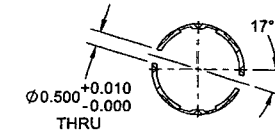
DETAIL D
SCALE 2X



SECTION E-E
SCALE 3X, 2 PL



SECTION G-G
SCALE 3X, 4 PL



SECTION H-H
SCALE 3X, 4 PL

RELEASED
2010-09-15

DESIGN	SC	DART AEROSPACE USA, INC. PORT HADLOCK, WA	
DRAWN	SC		
CHECKED	SC	DRAWING NO.	REV. A
MFG. APPR.		D4168	SHEET 4 OF 11
APPROVED		TITLE	SCALE
DE APPR.		350 SKIDTUBE ASSEMBLY	NTS
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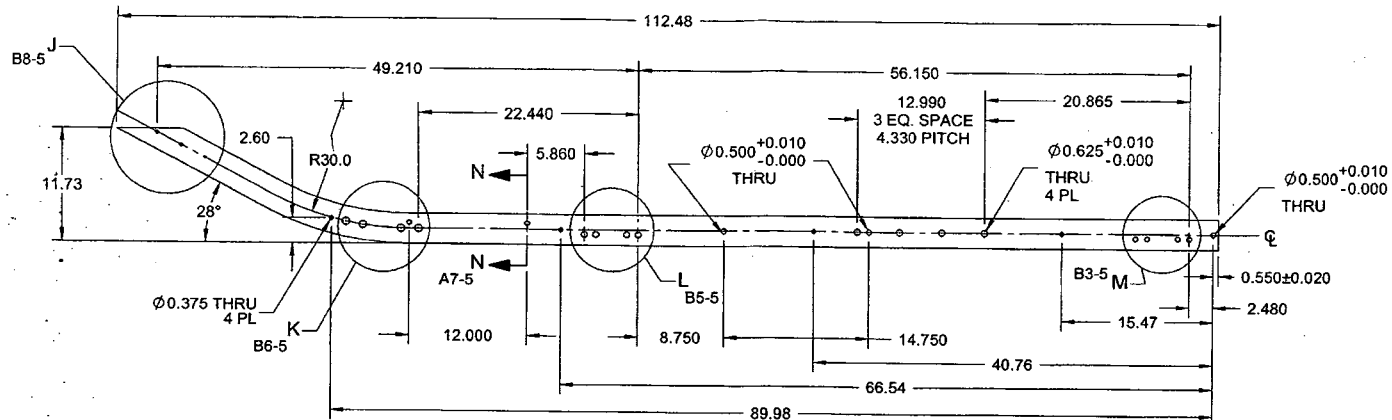
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

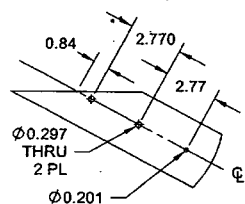
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

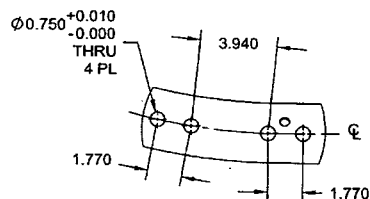


81.400.

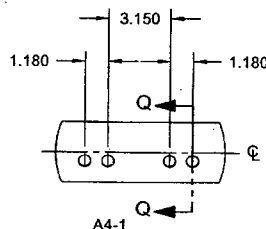
D4168-2 RH SKIDTUBE



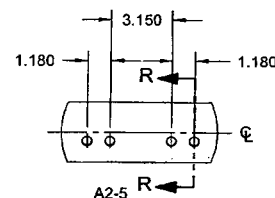
DETAIL J
SCALE 2X



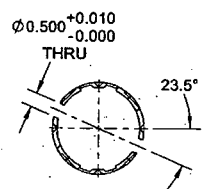
DETAIL K
SCALE 2X



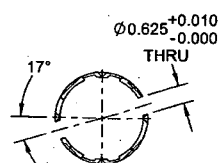
DETAIL L
SCALE 2X



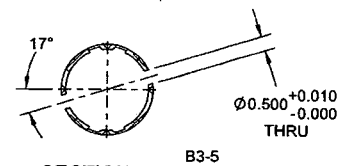
DETAIL M
SCALE 2X



SECTION N-N
SCALE 3X, 2 PL



SECTION Q-Q
SCALE 3X, 4 PL



SECTION R-R
SCALE 3X, 4 PL

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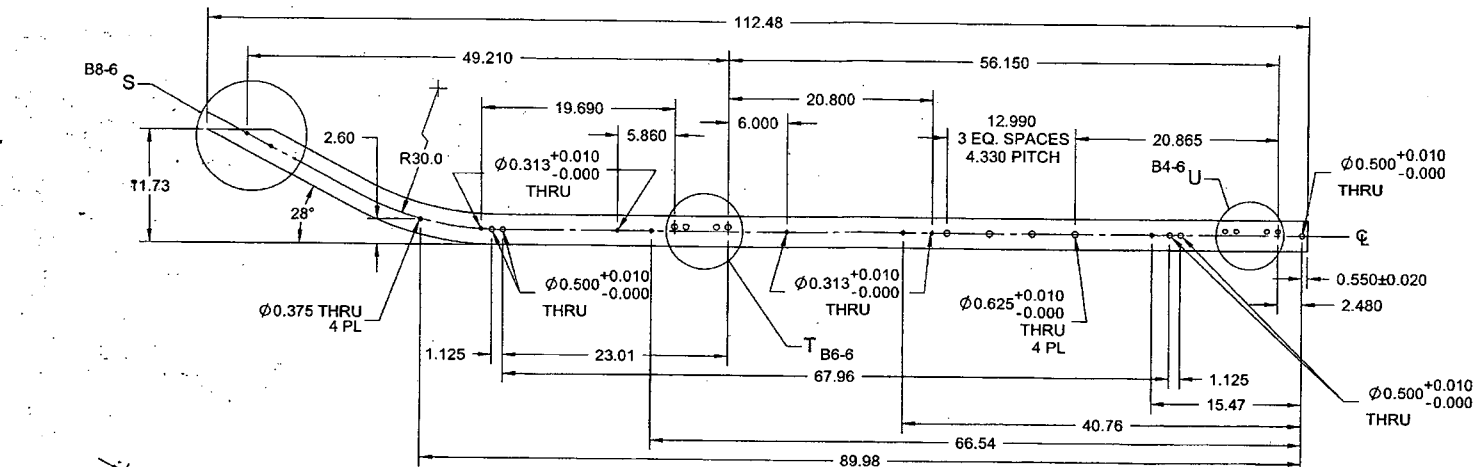
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

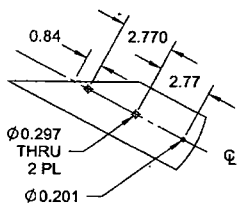
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

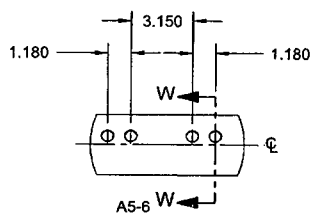
NOTE: Date & initial all entries



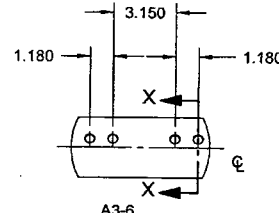
D4168-3 LH SKIDTUBE



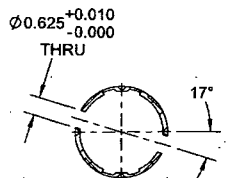
DETAIL S
SCALE 2X



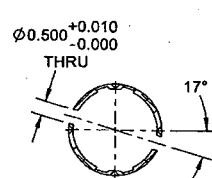
DETAIL T
SCALE 2X



DETAIL U
SCALE 2X



SECTION W-W
SCALE 3X, 4 PL



SECTION X-X
SCALE 3X, 4 PL

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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

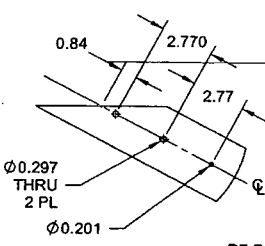
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

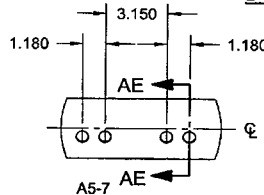
NOTE: Date & initial all entries

8 7 6 5 4 3 2 1

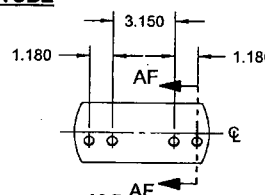
DETAIL AA
SCALE 2X
D7-7



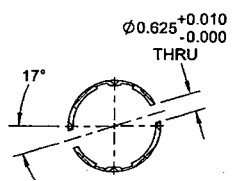
DETAIL AB
SCALE 2X
C4-7



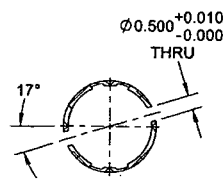
DETAIL AC
SCALE 2X
D3-7



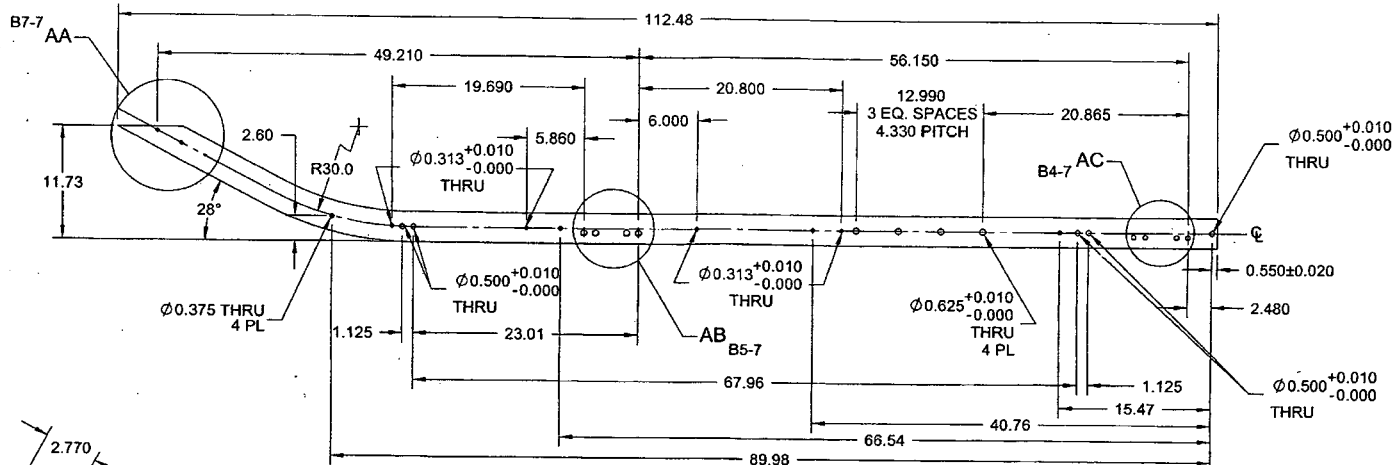
SECTION AE-AE
SCALE 3X, 4 PL
B6-7



SECTION AF-AF
SCALE 3X, 4 PL
B4-7



D4168-4 RH SKIDTUBE



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8 7 6 5 4 3 2 1

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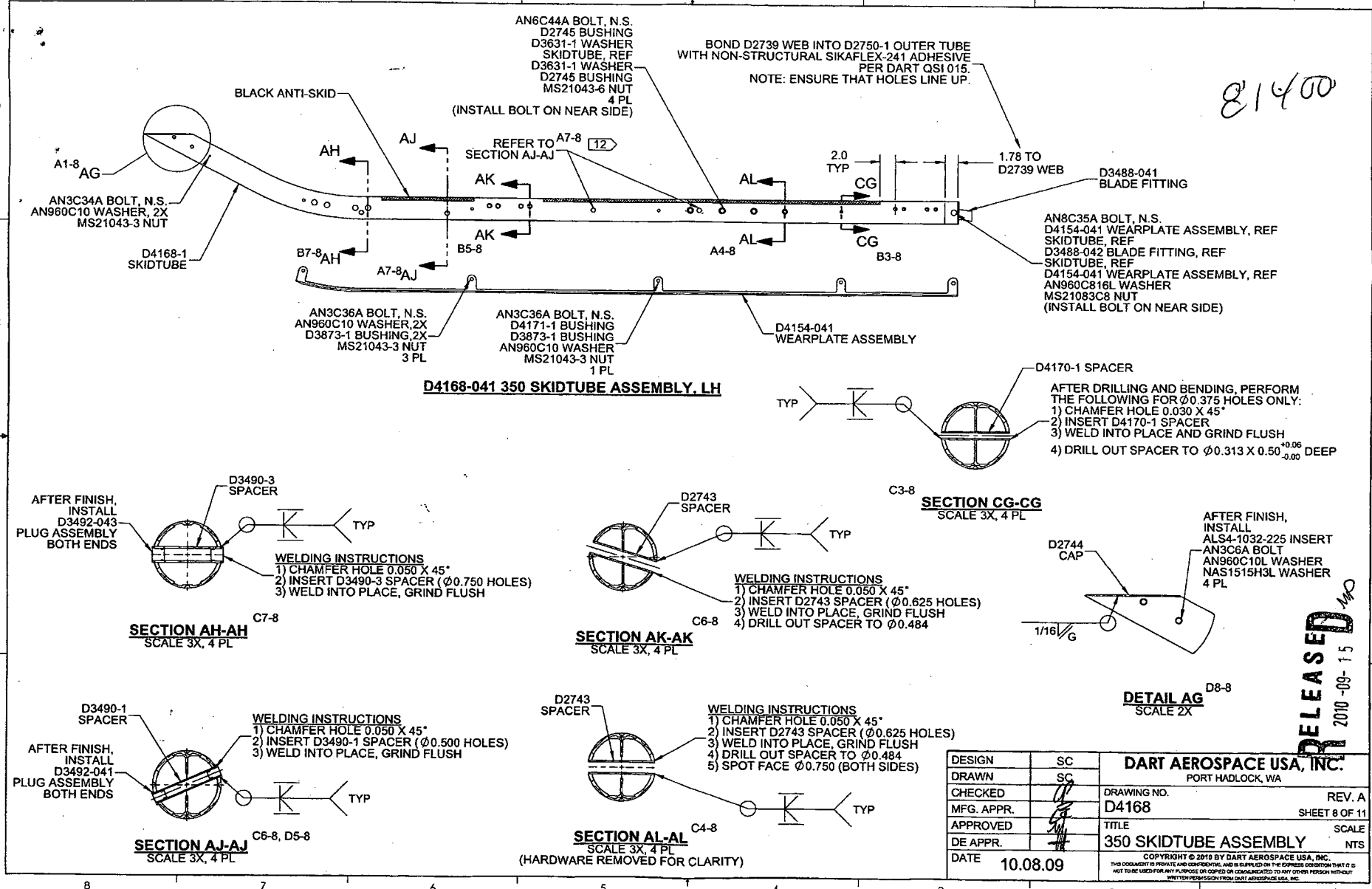
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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

81400



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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

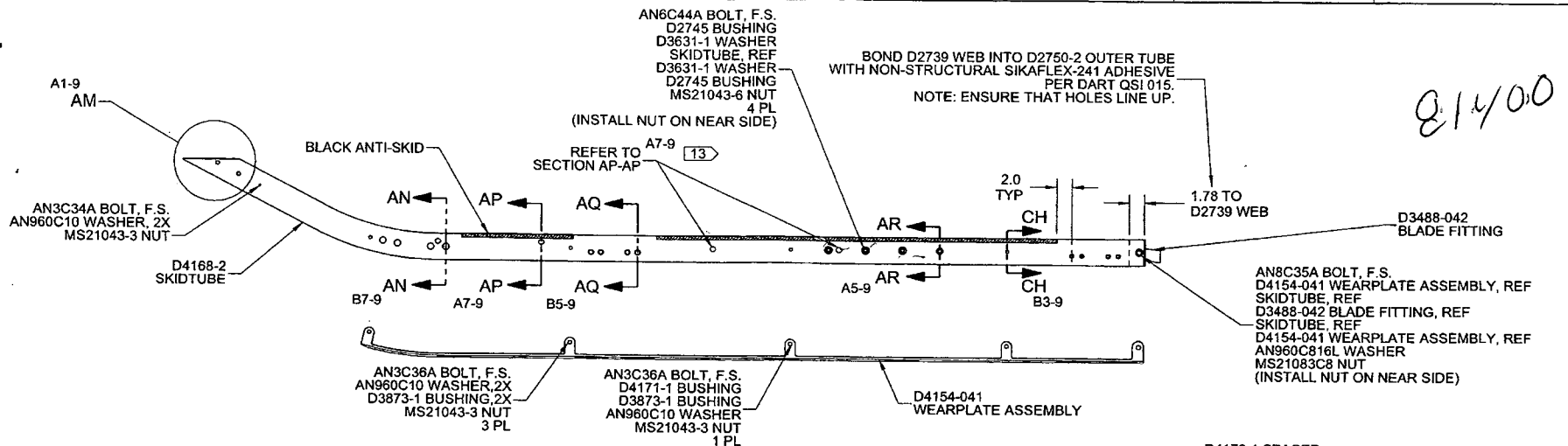
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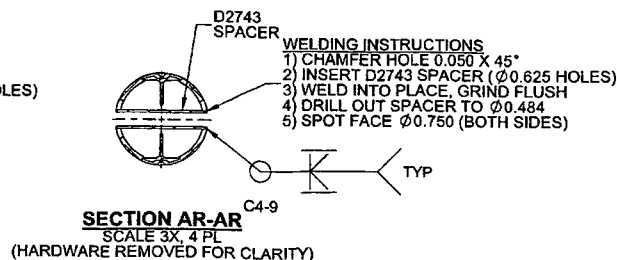
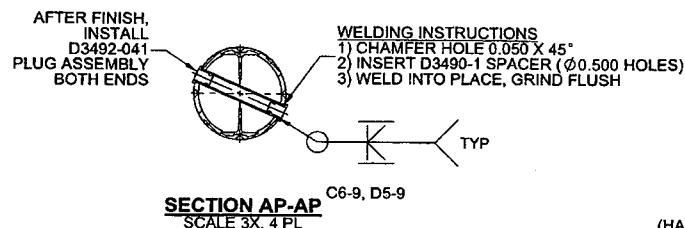
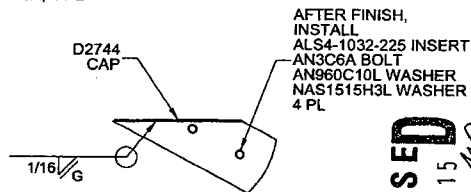
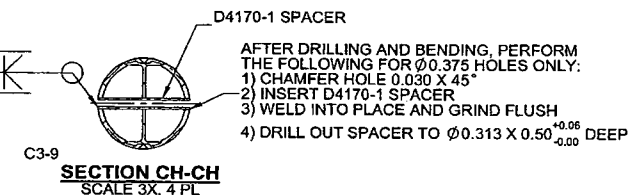
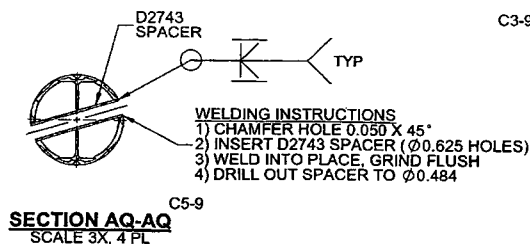
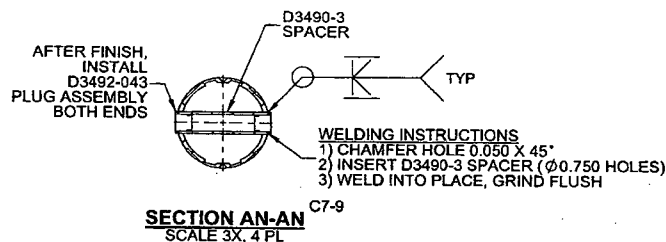
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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81400



D4168-042 350 SKIDTUBE ASSEMBLY, RH



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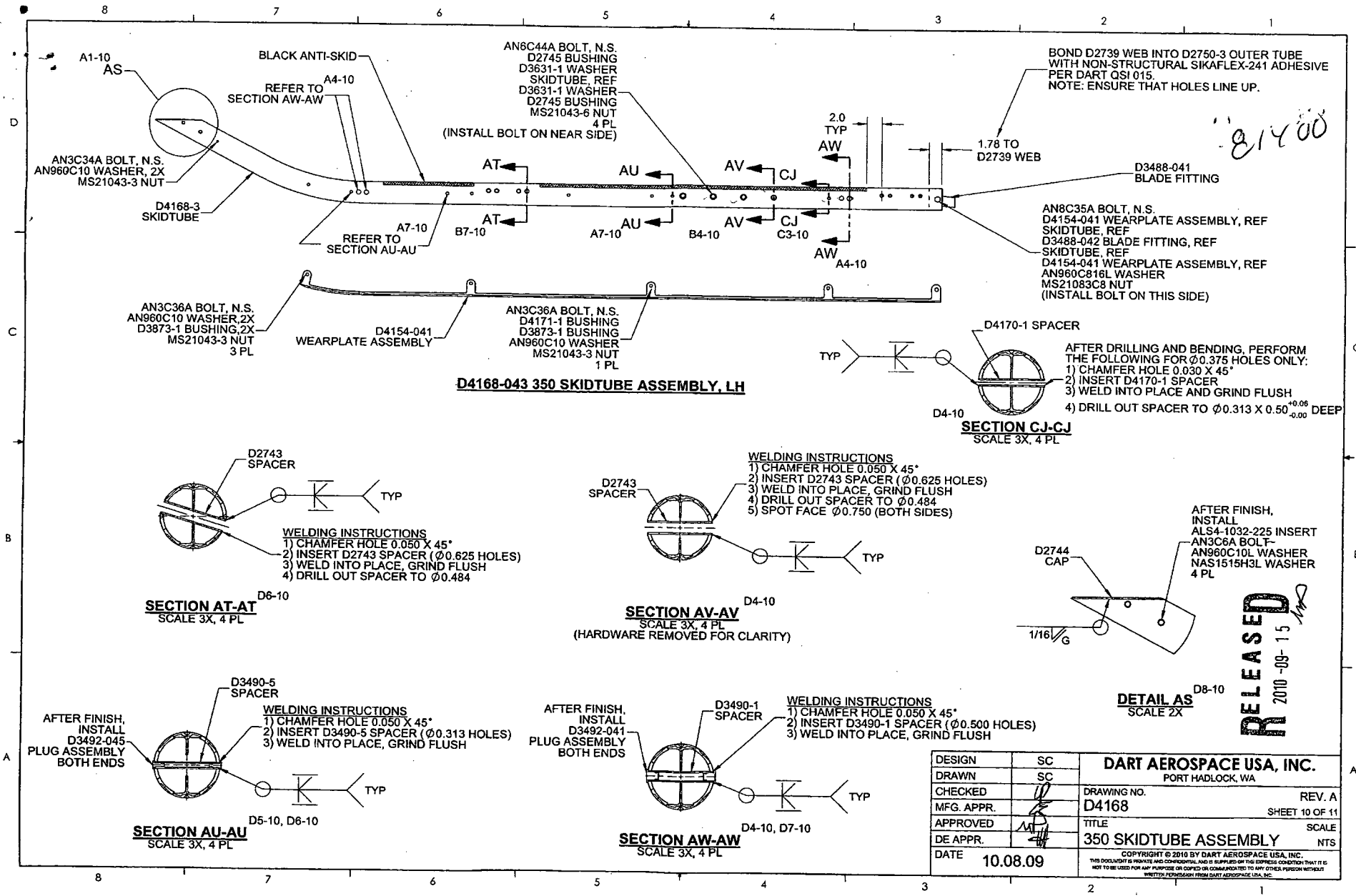
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector





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Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



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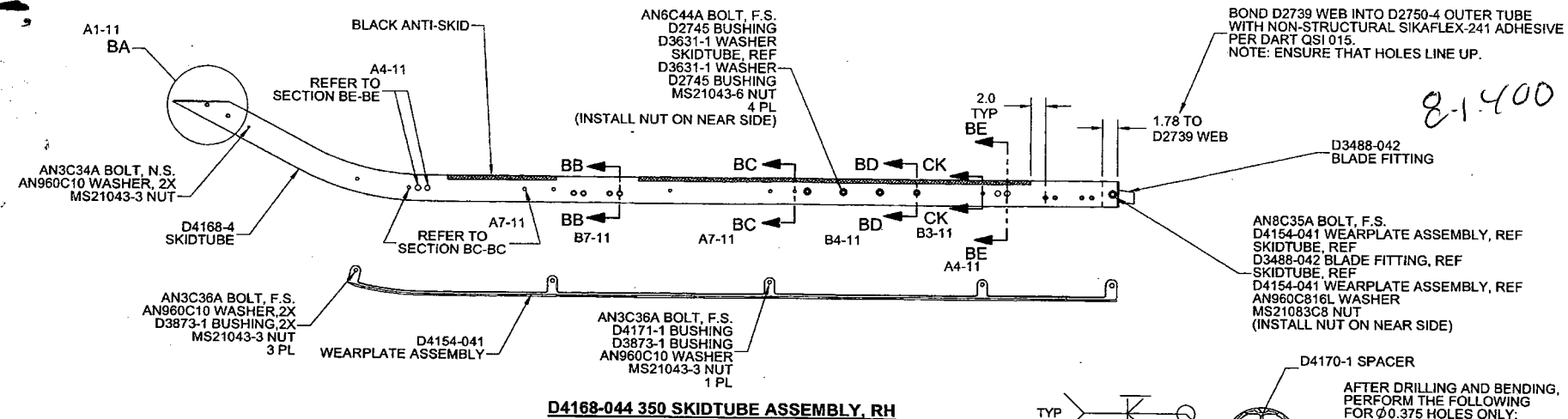
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



D4168-044 350 SKIDTUBE ASSEMBLY, RH

SECTION BB-BB
SCALE 3X, 4 PL

SECTION BD-BD
SCALE 3X, 4 PL
(HARDWARE REMOVED FOR CLARITY)

SECTION CK-CK
SCALE 3X, 4 PL

SECTION BC-BC
SCALE 3X, 4 PL

SECTION BE-BE
SCALE 3X, 4 PL

DETAIL BA
SCALE 2X

DESIGN	SC	DART AEROSPACE USA, INC.	
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MFG. APPR.	<i>SC</i>	D4168	SHEET 11 OF 11
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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

NO. 289

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliott
Job number: 81400
Part number: A350-636-016
Description: Shuttle
Welding Process: Tig[☒] Mig[]
Base material: Alum
Current: AC[☒] DC[]

TEST REQUIREMENTS AND RESULTS

Visual:

pass[☒] fail[]

Penetration:

pass[☒] fail[]

UNACCEPTABLE

Cracks:

pass[☒] fail[]

Undercut:

pass[☒] fail[]

Pin holes:

pass[☒] fail[]

Overlap (cold lap)

pass[☒] fail[]

Porosity (surface):

pass[☒] fail[]

Coloration:

pass[☒] fail[]

Qualifier David Sewel

Date of Test Coupon 12.04.17

Welder Barclay Elliott

Date of Test Coupon 12.04.17

The above named individual is qualified in accordance with AWS D17.1.2001 to weld